

## THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A vehicle external mirror assembly comprising:
  - a head;
  - a mount for attaching said head to a vehicle; and
  - a mirror;

said head comprising:

  - a moulded thin external plastic shell; and
  - a foam core, said foam anchoring and supporting said shell.
2. A vehicle external mirror assembly according to claim 1 further comprising a load diffuser extending laterally into said foam core from said mount,

wherein, in use, loads acting on said head are transmitted through said foam to said load diffuser.
3. A vehicle external mirror assembly according to claim 2 wherein said head is pivotable with respect to said mount.
4. A vehicle external mirror assembly according to claim 3 wherein the interior surface of both said front and rear shells are rough to improve adhesion to said foam.
5. A vehicle external mirror assembly according to claim 3 where said mount has a pivot assembly receiving portion, a vehicle body abutment and connection portion, and a body, said body comprising:
  - a moulded thin external plastic body shell; and
  - a second foam core, said second foam anchoring and supporting said body shell.
6. A vehicle external mirror assembly according to any one of claims 2, 3, 4 or 5 wherein the stiffness of said diffuser reduces from adjacent said mount to its periphery.

14

7. A vehicle external mirror assembly comprising:
  - a head;
  - a mount for attaching said head to a vehicle; and
  - a mirror;

said head comprising:

  - a front moulded thin external plastic shell;
  - a rear moulded thin external plastic shell meeting said front shell in an edge to edge relationship with an overlapping joint; and
  - a foam core, said foam anchoring and supporting said front and rear shells.
8. A vehicle external mirror assembly according to claim 7 wherein said overlapping joint is formed from a projection, extending from the edge of one of the front or rear shells, received within a groove within the edge of the other of said front or rear shells.
9. A vehicle external mirror assembly according to claim 8 further comprising a load diffuser extending laterally into said foam core from said mount,  
wherein, in use, loads acting on said head are transmitted through said foam to said load diffuser.
10. A vehicle external mirror assembly according to claim 9 wherein said head is pivotable with respect to said mount.
11. A vehicle external mirror assembly according to claim 10 wherein the interior surface of both said front and rear shells are rough to improve adhesion to said foam.
12. A vehicle external mirror assembly according to claim 10 where said mount has a pivot assembly receiving portion, a vehicle body abutment and connection portion, and a body, said body comprising:
  - a moulded thin external plastic body shell; and

15

a second foam core, said second foam anchoring and supporting said body shell.

13. A vehicle external mirror assembly according to any one of claims 8, 9, 10, 11 or 12 wherein the stiffness of said diffuser reduces from adjacent said mount to its periphery.

14. A vehicle external mirror assembly comprising:

a head;

a mount for attaching said head to a vehicle; and

a mirror;

said head comprising:

a front moulded thin external plastic shell;

a rear moulded thin external plastic shell meeting said front shell in an edge to edge relationship with a butt joint; and

a foam core, said foam anchoring and supporting said front and rear shells.

15. A vehicle external mirror assembly according to claim 14 further comprising a hidden internal chamber formed between edges of said front and rear shells for preventing foam escaping to the exterior of said shells.

16. A vehicle external mirror assembly according to claim 15 wherein at least one of said front and rear shells terminates in parallel double edges to provide a double butt joint against the other of said front and rear shells, thereby forming said hidden internal chamber.

17. A vehicle external mirror assembly according to claim 16 further comprising a load diffuser extending laterally into said foam core from said mount, wherein, in use, loads acting on said head are transmitted through said foam to said load diffuser.

16

18. A vehicle external mirror assembly according to claim 17 wherein said housing is pivotable with respect to said mount.
19. A vehicle external mirror assembly according to claim 18 wherein the interior surface of both said front and rear shells are rough to improve adhesion to said foam.
20. A vehicle external mirror assembly according to claim 18 where said mount has a pivot assembly receiving portion, a vehicle body abutment and connection portion, and a body, said body comprising:
- a moulded thin external plastic body shell; and
  - a second foam core, said second foam anchoring and supporting said body shell.
21. A vehicle external mirror assembly according to any one of claims 14, 15, 16, 17, 18, 19 or 20 wherein the stiffness of said diffuser reduces from adjacent said mount to its periphery.
22. A vehicle external mirror assembly comprising:
- a head;
  - a mount for attaching said head to a vehicle; and
  - a mirror;
- said head comprising:
- a front moulded thin external plastic shell;
  - a rear moulded thin external plastic shell;
  - a porous foam gasket sandwiched between edges of the front and rear shell;
- and
- a foam core, the foam anchoring and supporting the shell.
23. A vehicle external mirror assembly according to claim 22 further comprising a load diffuser extending laterally into said foam core from said mount,

17

wherein, in use, loads acting on said head are transmitted through said foam to said load diffuser.

24. A vehicle external mirror assembly according to claim 23 wherein said housing is pivotable with respect to said mount.

25. A vehicle external mirror assembly according to claim 24 wherein the interior surface of both said front and rear shells are rough to improve adhesion to said foam.

26. A vehicle external mirror assembly according to claim 24 where said mount has a pivot assembly receiving portion, a vehicle body abutment and connection portion, and a body, said body comprising:

a moulded thin external plastic body shell; and  
a second foam core, said second foam anchoring and supporting said body shell.

27. A vehicle external mirror assembly according to any one of claims 22, 23, 24, 25 or 26 wherein the stiffness of said diffuser reduces as it extends away from said mount.

28. A method for manufacturing a vehicle external mirror housing, for mounting a rear vision mirror, comprising the steps of:

moulding a first thin plastic component for use as a front shell;  
moulding a second thin plastic component for use as a rear shell;  
positioning and retaining said first and second shells against each other in an edge-to-edge relationship so as to create an internal void; and  
substantially filling said void with foam to form a rigid assembly bonded together by said foam.

29. A method according to claim 28 wherein injection compression moulding is used to mould both of said front and rear thin plastic components.

30. A method according to claim 29 further comprising a sub-step of sandwiching a porous foam gasket between the edges of said first and second shells, whereby said gasket allows the escape of air but not foam from said void.
31. A method according to claim 30, wherein said second thin plastic component includes an aperture for receiving a motor mechanism assembly, further comprising the step of positioning said motor mechanism assembly over said aperture and wherein said foam bonds said motor mechanism assembly in position.
32. A method for manufacturing a vehicle external mirror housing, for mounting a rear vision mirror, comprising the steps of:  
moulding a pre-form component;  
blow moulding said pre-form component into a component having the external shape of a said mirror housing;  
substantially filling said blow moulded component with foam to form a rigid assembly.
33. A method for manufacturing a vehicle external mirror housing, for mounting a rear vision mirror, comprising the steps of:  
moulding a first thin plastic component for use as a front shell;  
gas assist injection moulding a second thin plastic component for use as a rear shell;  
positioning and retaining said first and second shells against each other in an edge-to-edge relationship so as to create an internal void; and  
substantially filling said void with foam to form a rigid assembly bonded together by said foam.
34. A method according to claim 33 wherein injection compression moulding is used to mould both of said front and rear thin plastic components.

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